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| 10/511,878 | 10/19/2004 | Lorrie Hunt | 2313-112 | 4219 |

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| EXAMINER |
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HERTZOG, ARDITH E

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| ART UNIT | PAPER NUMBER |
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1754

DATE MAILED: 06/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/511,878

Applicant(s)

HUNT ET AL.

Examiner

Ardith E. Hertzog

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 October 2004 and 16 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1, 3, 5-12, 21, 25-27, 29 and 30 is/are allowed.
- 6) ☒ Claim(s) 2, 4, 13-20, 22-24, 28 and 31-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 October 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input checked="" type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>16 December 2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Special Status

1. This action is in response to the "Petition Pursuant to 37 CFR § 1.102(c)" filed October 19, 2004, said petition having been **granted** February 24, 2005.

Priority

2. This application has been filed under 35 U.S.C. § 371 based upon International Application PCT/CA03/00593 filed April 23, 2003, and published (in English) as WO 03/090945 on November 6, 2003. In accordance with MPEP § 1893.03(e), acknowledgement is made of the corresponding International Search Report (ISR) (Form PCT/IPEA/210) and International Preliminary Examination Report (Form PCT/IPEA/409). Acknowledgment is also made of applicant's claim for domestic priority under 35 U.S.C. § 119(e) based upon provisional application number 60/374,512 filed April 23, 2002. **However:**
3. Applicant has not complied with the following condition for receiving the benefit of an earlier filing date under 35 U.S.C. § 119(e):

An application in which the benefits of an earlier application are desired must contain a specific reference to the prior application(s) in the first sentence(s) of the specification or in an application data sheet by identifying the prior application by application number.

See 37 CFR § 1.78(a)(2) and (a)(5), noting MPEP § 201.11 III. B. for the proper format.

Response to Amendment

4. Applicant's preliminary amendment filed October 19, 2004 has been entered, and claims 1-35, per said amendment, are pending.

Information Disclosure Statement

5. Receipt is acknowledged of the information disclosure statement (IDS) filed December 16, 2004. As the submission is in compliance with the provisions of 37 CFR § 1.97, the IDS has been considered, in accordance with the enclosed PTO-1449. In addition, it is respectfully noted that the listing of further references in the specification is not a proper IDS. 37 CFR § 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." **Therefore, unless the references have been cited by the examiner on form PTO-892 (or are noted on the PTO-1449), they have not been considered.**

Drawings

6. It is initially noted that:

The drawings for the national stage application must comply with PCT Rule 11. The copy of the drawings provided by the International Bureau has already been checked and should be in compliance with PCT Rule 11. Accordingly, the drawings provided by the International Bureau should be acceptable. The USPTO may not impose requirements beyond those imposed by the Patent Cooperation Treaty (e.g., PCT Rule 11). **However, the examiner does indeed have the authority to require new or more acceptable drawings if the drawings were published without meeting all requirements under the PCT for drawings.** Unless the applicant requests the use of drawings which he or she has submitted, the drawings to be employed in the national stage are those which are a part of the Article 20 communication. (MPEP § 1893.03(f), emphasis added)

7. The drawings are objected to, in accordance with the enclosed PTO-948 (noting PCT Rule 11.2 and 11.6).

8. **Corrected drawing sheets in compliance with 37 CFR § 1.121(d) are required in reply to the Office action to avoid abandonment of the application.**

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Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended". If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR § 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. **Any objection to the drawings will not be held in abeyance.**

Minor Informalities

9. The disclosure is objected to, because of the following minor informalities:
 - a. In both claims 12 and 13, it is suggested that "sonication" be deleted before "vessel", since, strictly speaking, claim 11 (upon which claims 12 and 13 depend) simply recites "a vessel".
 - b. In claim 13, "of" should evidently be deleted before "from one of said".

Appropriate correction is required.

Specification

10. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR § 1.75(d)(1) and MPEP § 608.01(o). **Clear**

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antecedent basis for the following claim limitations has not been found:

- a. that the sonication step further includes **using inert gas to purge the head space of the reservoir and sonication vessel**, per claim 12;
- b. transferring the sonicated media/fluid mixture from **either the sonication vessel or reservoir to a settling tank**, per claim 13;
- c. that **the flotation water is separated from froth, media and hydrocarbon containing liquid and recycled to the environment after pH adjustment**, per claim 17;
- d. the temperature **range** of claim 26;
- e. that the liquid hydrocarbons contain one or more **hydrocarbon subcomponents which are not liquids at sonication temperature**, per claim 30;
- f. the **minimum** temperature requirement of claim 31; and
- g. that the sodium-containing alkali metal is **commercially pure** sodium metal, per claim 32.

Clarification and/or appropriate correction is required.

Claim Rejections - 35 U.S.C. § 112

11. The following is a quotation of the second paragraph of 35 U.S.C. § 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

12. Claims 2, 13-20, 22-24 and 28 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Said claims are considered

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vague, indefinite, and/or confusing, due to the following antecedent basis problems: In claim 2, there is insufficient antecedent basis for "said slurry" at line 2; replacing "slurry" with "media/fluid mixture" is suggested. In claim 13, there is insufficient antecedent basis for "sonicated liquid" at lines 4-5; replacing "liquid" with "fluid" is suggested. In claim 16, there is insufficient antecedent basis for "said... soil" at lines 1-2; replacing "soil" with "media" is suggested. In claim 17, there is insufficient antecedent basis for "said flotation water separated from froth, media and hydrocarbon containing liquid" at lines 1-2. Given the objection noted in paragraph 10.c. above, it is not readily apparent how applicant should best revise this claim; perhaps the body of claim 17 could be revised to read: "wherein the water used in said flotation cell is subsequently separated from froth, media and hydrocarbon containing liquid, and then recycled to the environment after pH adjustment." In claim 22, there is insufficient antecedent basis for "said lime-sonicated media" at lines 2-3; deleting "said" is suggested. In claim 28, there is insufficient antecedent basis for "said fluid" at lines 2-3; replacing "fluid" with "mixture" is suggested (compare to claim 34). Lastly, note that claims 14, 15, 18-20 and 24 have been included in this rejection, given their dependence upon claim 13, while claim 23 has been included herein, given its dependence upon claim 22. Appropriate correction is required.

13. Claims 4 and 31 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Said claims are considered vague, indefinite, and/or confusing, due to the phrase "such as" in claim 4 (upon which claim 31 depends): it

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cannot be determined whether the limitations following this term are a **required** part of the claimed invention. See MPEP § 2173.05(d). Appropriate correction is required.

14. Claim 32 is rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Said claim is considered vague, indefinite, and/or confusing, due to the phrase "**commercially pure** sodium metal" (emphasis added). That is, especially in light of the objection noted in paragraph 10.g. above, it is not clear what would or would not comprise such "commercially pure" metals, and/or whether or not one of ordinary skill in the art would readily recognize the intended scope of this claim. Appropriate correction is required

Claim Rejections - 35 U.S.C. §§ 102 & 103

15. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

16. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. Claim 33 is rejected under 35 U.S.C. § 102(b) as anticipated by JP 2002-66498 (hereinafter "JP '498"). The drawing of JP '498 discloses an apparatus comprising,

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among other components: tank 1/tank A (i.e., "a reaction vessel"); an ultrasonic wave and static induction device/ultrasonic apparatus (i.e., "a sonicator without grinding media"); and an electrical heater/electric heater installed at the bottom of tank A (i.e., "a heater for controlling the temperature...[within the reaction vessel]) (see attached DERWENT and PAJ abstracts for JP '498). Given that JP '498 teaches injecting carbon dioxide gas into tank A, it is submitted that this tank must have at least one opening reading on the vent limitation recited in instant claim 33. **Accordingly**, JP '498 anticipates instant **apparatus** claim 33, since an apparatus meeting all **structural** limitations thereof appears taught therein, noting that:

[C]laims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. *In re Schreiber*, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997)...; see also *In re Swinehart*, 439 F.2d 210, 212-13, 169 USPQ 226, 228-29 (CCPA 1971); *In re Danly*, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). "[A]pparatus claims cover what a device *is*, not what a device *does*." *Hewlett-Packard Co. v. Bausch & Lomb Inc.*, 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990) (emphasis in original).

A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987) (MPEP 2114)

"Expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim"... [and] "[i]nclusion of material or article worked upon by a structure being claimed does not impart patentability to the claims." (MPEP 2115, case law citations omitted)

It is further noted that the additional components of the JP '498 apparatus are not excluded from instant claim 33 with its open "comprising" language.

18. Claim 34 and 35 are rejected under 35 U.S.C. § 103(a) as being unpatentable

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over JP '498. JP '498 is relied upon as set forth above. Instant claims 34 and 35 are not similarly anticipated though, in that the structure of the sonicator cannot be determined from the attached abstracts. **However**, apparatus falling within the scope of these claims are considered to have been obvious to one of ordinary skill in the art, at the time of applicant's invention, since, absent contrary evidence, selection of a sonicator with optimal operating features—such as the location of the resonating probe/member, per instant claims 34 and 35—for use within the JP '498 apparatus is considered to have been within the level of ordinary skill.

Allowable Subject Matter

19. Claims 1, 3, 5-12, 21, 25-27, 29 and 30 are allowed.
20. Claims 2, 4, 13-20, 22-24, 28, 31 and 32 would be allowable if rewritten or amended to overcome the 35 U.S.C. § 112, second paragraph, rejections, set forth in this Office action.
21. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record fails to teach or to have suggested a method for treating polychlorinated biphenyl (PCB) contaminated media comprising the three **very specific steps required** by applicant's claim 1 (upon which claims 2-32 ultimately depend). The closest prior art of record is considered to be US 5,318,228 (Macas), which teaches treatment of mineral oils or other liquids containing organohalides such as PCBs via a sonic generator with grinding media, wherein an alkali metal such as sodium is added to the mixture to be ground—the PCB reacts with the alkali metal and is destroyed (see abstract; col. 2, lines 53-55; col. 4, lines 56-63). Note that the **specific** sonic generator

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disclosed by Macas is that disclosed in US 5,005,773 (see col. 3, lines 22-24)—i.e., an audio frequency generator disclosed by applicant as preferred in the paragraph bridging pages 8-9 of the instant specification—and that Macas even **exemplifies** such dehalogenation process (see Example 2 in col. 5). Thus, Macas teaches methods comprising steps a) and b) of the instant claim 1, wherein the PCB-containing liquid is reacted with an alkali metal such as sodium. **However**, Macas teaches that the alkali metal must be in **solid** form, **clearly teaching away** from the use of the **molten** sodium-containing alkali metal **required** by step c) of instant claim 1 (see col. 2, lines 25-29, 50-52, noting col. 3, line 52 and claim 26). **Accordingly**, all instant method claims are considered to contain allowable subject matter, per paragraphs 19.-20. above.

Conclusion

22. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. These references are considered cumulative to or less material than those discussed above. Note that US 5,690,811 is an equivalent of WO 97/14765 cited in the ISR and on the PTO-1449. Both US 5,228,921 and US 2003/0036672 A1 are discussed in applicant's specification. Note that, in contrast to applicant's method claims, US 6,061,383 teaches **ultrasonic** treatment of PCB's, while, in contrast to applicant's apparatus claims, the melting furnace disclosed therein is **not** coupled to the sonication reaction vessel.


23. Any inquiry concerning this communication should be directed to Ardith E. Hertzog at 571-272-1347. The examiner can normally be reached on Monday through


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Friday (from about 8:00 a.m. - 4:30 p.m.).

24. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley S. Silverman, can be reached at 571-272-1358. The fax number for the organization where this application is assigned is 703-872-9306.

25. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. For any questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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AEH
June 13, 2005